

Appendix V-I

Table V-I.1. Ambient Monitoring Data Years Used for Chowan River Basin Plans and Integrated Reporting Periods.

Basin Plan Year	AMS Data Window	Notes
1997	1991-1995	
2002	9/1/1995-8/31/2000	Chlorophyll a data for September 1996 – March 2001 removed from use. There was a statewide Chl a data issue.
2007	9/1/2000-8/31/2005	Nutrient reporting limits modified several times in 2001. See reporting limits table below.
2020	All data (1981-2018) Focus 2010-2018	There are a few stations with data back to the 1970's.
IR Year	AMS Data Window	Notes
1998	1991-1995	
2000	1991-1995	
2002	1991-1995	
2004	9/1/95-8/31/00	2002 basin plan; except for Chl a (used historic listing)
2006	9/1/95-8/31/00	2002 basin plan; except for Chl a (used historic listing)
2008	2002-2006	Statewide Assessment
2010	2004-2008	Statewide Assessment
2012	2006-2010	Statewide Assessment
2014	2008-2012	Statewide Assessment
2016	2010-2014	Statewide Assessment
2018	2012-2016	Statewide Assessment
2020	2014-2018	Statewide Assessment
2022	2016-2020	Statewide Assessment
2024	2018-2022	Statewide Assessment

Table V-I.2. DWR Nutrient Reporting Limits. (DWR laboratory confirmed these limits have not changed since 3/1/2009; April Williams, personal communication, 6/15/2020).

PARAMETER	REPORTING LEVEL BY DATE* (mg/L)				
	PRE-2001	3/13/2001 TO 3/29/2001	3/30/2001 TO 7/24/2001	7/25/2001 TO 2/28/2009	3/01/2009 TO PRESENT
NH ₃	0.01	0.50	0.20	0.01	0.02
TKN	0.10	1.00	0.60	0.20	0.20
NO ₂ +NO ₃	0.01	0.50	0.15	0.01	0.02
TP	0.01	0.50	0.10	0.02	0.02
*In early 2001, the DWQ Laboratory Section reviewed its internal Quality Assurance/Quality Control (QA/QC) programs and analytical methods. This effort resulted in a marked increase in reporting levels for certain parameters. New analytical equipment and methods were subsequently acquired to establish new lower reporting levels and more scientifically supportable quality assurance. As a result, the reporting levels quickly dropped back down to at or near the previous reporting levels.					

Table V-I.3. Chowan River Nutrient/Chlorophyll a 303(d) Impairment History 1998-2020 (Table 5-4).

303(d) Listing Year	Chowan River AU	AU Segment Description	Stream Length (Miles)	Integrated Report Category	Cause of Impairment/ Reason for Listing	Potential Sources
1998	25e	From Below Holiday Island near Harrellsville	5.5	5	Nutrients	Industrial; Municipal
	25f	From Colerain to US Hwy 17 at Edenhause	14.5	5	Nutrients	NA
2000	25e *	From Below Holiday Island near Harrellsville	5.5	5	Nutrients	Industrial; Municipal
	25f *	From Colerain to US Hwy 17 at Edenhause	14.5	5	Nutrients	NA
2002	25b	From Below Holiday Island near Harrellsville to subbasin 03-01-03/03/01/04 boundary	12.2	5	Nutrients	Industrial; Municipal
	25c	+ From subbasin 03-01-03/03/01/04 boundary to mouth defined by a line extending in a southerly direction from Reedy Point on the north shore of Albemarle Sound to a point of land on the south side of the mouth of Black Walnut Swamp	7.8	5	Nutrients	NA
2004	25b	From Below Holiday Island near Harrellsville to subbasin 03-01-03/03/01/04 boundary	12.2	5	Historical listing decision: Nutrients	Industrial; Municipal
	25c	+ From subbasin 03-01-03/03/01/04 boundary to mouth of Black Walnut Swamp	7.8	5	Historical listing decision: Nutrients	NA
2006	25b	From Below Holiday Island near Harrellsville to subbasin 03-01-03/03/01/04 boundary	14.1	5	Historical listing decision: Nutrients	Industrial; Municipal
	25c	+ From subbasin 03-01-03/03/01/04 boundary to mouth of Black Walnut Swamp	7.8	5	Historical listing	NA

					decision: Nutrients	
2008	25b	From Below Holiday Island near Harrellsville to subbasin 03-01-03/03/01/04 boundary	14.1	1 [^]	Delisted	
	25c	+ From subbasin 03-01-03/03/01/04 boundary to mouth of Black Walnut Swamp	7.8	1 [^]	Delisted	
2010	25b	From Below Holiday Island near Harrellsville to subbasin 03-01-03/03/01/04 boundary	14.1	1		
	25c	+ From subbasin 03-01-03/03/01/04 boundary to mouth of Black Walnut Swamp	7.8	1		
2012	25b	From Below Holiday Island near Harrellsville to subbasin 03-01-03/03/01/04 boundary	14.1	1		
	25c	+ From subbasin 03-01-03/03/01/04 boundary to mouth of Black Walnut Swamp	7.8	1		
2014	25b	From Below Holiday Island near Harrellsville to subbasin 03-01-03/03/01/04 boundary	14.1	1		
	25c	+ From subbasin 03-01-03/03/01/04 boundary to mouth of Black Walnut Swamp	7.8	1		
2016	25b	From Below Holiday Island near Harrellsville to subbasin 03-01-03/03/01/04 boundary	14.1	1		
	25c	+ From subbasin 03-01-03/03/01/04 boundary to mouth of Black Walnut Swamp	7.8	1		
2018	25b	From Below Holiday Island near Harrellsville to subbasin 03-01-03/03/01/04 boundary	14.1	1		
	25c	+ From subbasin 03-01-03/03/01/04 boundary to mouth of Black Walnut Swamp	7.8	3a (Inconclusive)	Chlorophyll a	
2020	25b	From Below Holiday Island near Harrellsville to subbasin 03-01-03/03/01/04 boundary	14.1	TBD		
	25c	+ From subbasin 03-01-03/03/01/04 boundary to mouth of Black Walnut Swamp	7.8	TBD		

*2002 note: As a result of implementation of the nutrient sensitive waters (NSW) management strategy, substantial reductions in total phosphorus and total nitrogen loads are reported. DWQ will assess the continued implementation of the NSW strategy prior to TMDL development.

+ AU Segment Description - From subbasin 03-01-03/03/01/04 boundary to mouth defined by a line extending in a southerly direction from Reedy Point on the north shore of Albemarle Sound to a point of land on the south side of the mouth of Black Walnut Swamp

[^] Category 1 in 2008 – Segment of Chowan River removed from the impaired 303 (d) list/category 5. Reason for delisting was “the assessment and interpretation of more recent or more accurate data in the record demonstrate that the applicable water quality standard is being met”.

TBD – To be determined as part of the 2020 water quality assessment process which is underway.

Link to 303(d)/305(b) Integrated Report lists - <https://deq.nc.gov/about/divisions/water-resources/planning/modeling-assessment/water-quality-data-assessment/integrated-report-files>

Table V-I.4. Chowan River Basin NPDES Point Source Discharge Total Nitrogen and Total Phosphorus Loading (Table 5-3).

Year	Nitrogen		Phosphorus		Notes
	Load (lb/yr)	% reduction from 1982	Load (lb/yr)	% reduction from 1982	
1982	612,880		55,556		
1989	39,680	93.53	1,323	97.62	
1996	40,065	93.46	2,926	94.73	1 Major Discharger – Union Piece Dye Works (1.5 MGD)
2019	6,216	98.99	2,321	95.82	1 Major Discharger - Ahoskie WWTP (1.3 MGD with NSW Limits of 3 mg/L-N & 1 mg/L-P)
1982, 1989 and 1996 loading from 1997 Chowan River Basinwide Water Quality Management Plan page 3-6 (https://deq.nc.gov/about/divisions/water-resources/planning/basin-planning/water-resource-plans/chowan-1997). -2019 load, See Appendix V-I.5 table for specific permit loading details.					

Table V-I.5. Chowan River Basin NPDES Point Source Permits with 2019 estimated Total Nitrogen and Total Phosphorus Load (Mike Templeton, July 2020).

Permit Number	Facility Name	Owner Type	County	Permit Type	Class	Permit Flow GPD	Receiving Stream	TN Load (lb/yr)	TP Load (lb/yr)	HUC-12	Old DWR Subbasin #
NC0033782	Gatesville Elementary School	Government - County	Gates	Discharging 100% Domestic < 1MGD	Minor	5,000	Bennetts Creek (Merchants Millpond)	27.2	6.9	030102030504	03-01-01
NC0033804	T.S. Cooper Elementary School	Government - County	Gates	Discharging 100% Domestic < 1MGD	Minor	4,000	Raynor Swamp (Hunters Millpond)	20.0	2.7	030102030502	03-01-01
NC0043974	Buckland Elementary School	Government - County	Gates	Discharging 100% Domestic < 1MGD	Minor	6,000	Cole Creek (Lilleys Millpond)	12.4	2.2	030102030204	03-01-01
NC0088561	Ahoskie WWTP	Government - Municipal	Hertford	Municipal Wastewater Discharge, Large	Major	1,300,000	Ahoskie Creek	3,235	847	030102030304	03-01-01
	2015-2019: Average Load Min-Max							3,829 3,235-4,567	906 689-1,163		
NC0089541	Ashton Lewis Lumber Co.	Non - Government	Gates	Industrial Process & Commercial WW Discharge	Minor	Null	Bennetts Creek (Merchants Millpond)	---	---	030102030504	03-01-01
NC0032719*	Valhalla WTP	Non - Government	Chowan	Water Plant and Water Conditioning Discharge	Minor	Not limited	Rockyhock Creek (Bennett Millpond)*	---	---	030102030702*	03-04-04*
NC0089516	Perdue Agribusiness LLC (Cofield)	Industrial Process & Commercial Wastewater Discharge	Hertford	NCCW, BB, RO reject	Minor	Not limited	Unnamed Tributary Deep Creek	1,922	1,146	030102030206	03-01-01

*New outfall under construction (as of January 2020 permit renewal) – discharge location will be in the Chowan River [AU# 25b], HUC-030102030701, and old DWR subbasin number 03-01-03.

NCCW – Non-Contact Cooling Water; BB – Boiler Blowdown; RO – Reverse Osmosis;